DRINKING WATER PROTECTION FACT SHEET
FOR SHALLOW INJECTION WELL OWNERS & OPERATORS

Wastewater (process or storm water) at some businesses enter floor drains or storm drains that discharge directly to sumps, drywells, and septic tanks with drainfields. These types of disposal practices release wastes directly into the ground and can pollute groundwater and surface water. This fact sheet presents information on injection wells and the management practices that will help preserve and protect drinking water resources for all Oregonians.

Most Common Injection Wells In Oregon

- Stormwater wells.
- Catch basins with sumps.
- Dry wells and French drains.
- On-site drainfields/septic systems (serving 20 or more people).
- Industrial/Commercial disposal wells.
- Aquifer recharge wells.
- Cooling water return flow wells.
- Aquifer remediation wells.
- Geothermal systems.

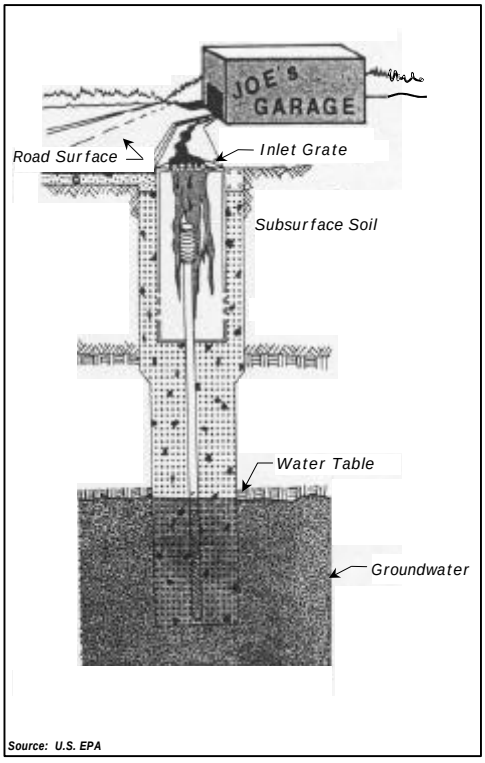
NOTE:

A more detailed list of injection wells can be obtained from DEQ.

(See "Resources" listed on page 2.)

What Is An Underground Injection Control (UIC) Well?

An underground injection well is any system, structure, or activity that is created to place fluid directly into the subsurface. Common types of injection wells found in Oregon are shown to the left. Federal regulations define five classes of injection wells. Most underground injection wells in Oregon are shallow injection wells which include the majority of injection wells used by individuals, businesses, industrial facilities, cities, and counties to remove storm and wastewater from their properties. Various organic and inorganic wastes such as nitrates, phosphates, bacteria, solvents, waste oil, paint, and heavy metals can be present in the water that goes to an injection well. Even extremely low concentrations of many of these wastes can be hazardous to human health and the environment if they enter groundwater.



Source: U.S. EPA

How Can I Find Out If I Have An Injection Well On My Property?

It may be difficult to know where waste fluids placed in a sink, floor drain, or storm drain will end up. If you are in an unsewered area, your wastewater may discharge to an injection well and/or septic system. Even if your area has a municipal sanitary sewer, some sewage treatment plants do not accept industrial process wastewater which must be disposed in other systems. In some areas, the sewer system may have been installed after many of the industrial buildings were already constructed, with only the sanitary waste lines being later connected to the sewer. See the suggestions above for ways to evaluate whether your waste fluids are being routed to injection wells.

Suggestions

- **Check your sewer and water bill. If you are not separately billed for storm water discharge, storm water and inside drains may lead to injection wells. If you lease the property and do not receive a wastewater bill, contact the property owner.**
- **Compare the date of facility construction/operation to the dates that the sewer lines were installed in the area (contact your public works department to find out when sewer connections were available in the area). If your facility was constructed before the local sewer was installed, it is possible that only the sanitary lines were connected to the sewer and other drains in the facility and parking areas remain connected to an injection well.**
- **Check building plans or drawings to locate wastewater lines and drains.**
- **Call your sewer plant. Find out if they accept industrial wastewater that is generated at your facility.**
- **DEQ or a plumber can offer suggestions for dye testing and drain line locating.**

Oregon

DEPARTMENT OF ENVIRONMENTAL QUALITY
811 S.W. Sixth Avenue ✷ Portland, Oregon 97204

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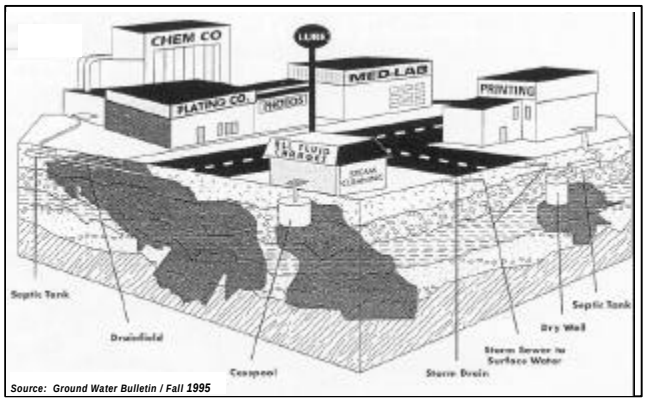
Why Are Shallow Injection Wells A Risk To Drinking Water?

When properly sited, constructed, maintained and operated, injection wells can be an effective and environmentally safe means of fluid waste disposal. The degree of risk to underlying groundwater and nearby surface water varies from quite high to very low. Factors that effect the risk are the hydrogeologic setting, well location, well construction and operation, volume and quality of commonly injected fluids, and likelihood of accidental injection. For example, injection wells or storm drain sumps receiving untreated urban runoff from residential and commercial areas could routinely inject water that violates drinking water standards directly to groundwater. Furthermore, in areas where hazardous chemicals are handled, an accidental product or chemical spill could enter a storm drain sump and lead to severe groundwater contamination. Groundwater, once contaminated, is difficult and costly to clean up.



Source: Ground Water Bulletin / Fall 1995

Shallow injection wells and infiltration systems which introduce wastes directly into the ground are not designed to treat industrial wastes. Harmful chemicals in the industrial wastes may kill the bacteria in a septic system that are necessary for the effective primary treatment of sanitary wastes before discharge to a drainfield. When septic systems do not function properly, toxic chemicals and poorly treated sanitary wastes percolate into the ground; these contaminates can reach the water table and may contaminate a drinking water source.

Water supply contamination is not only a public health and environmental concern, but also a financial burden that can easily cost both the community and the responsible business several hundred thousand dollars. Controlling discharge and properly siting or maintaining injection wells protects the environment and your financial resources.

Prohibited Injection Wells in Oregon

- **UICs associated with waste disposal and hydrocarbon storage into a geologic formation below the lowermost drinking water aquifer.**
- **Process wells related to mineral extraction and leachate.**
- **Hazardous/radioactive waste disposal wells.**
- **Automotive service station disposal wells (motor vehicle waste disposal well).**
- **Agricultural drainage wells.**

What Are The Regulatory Requirements For Injection Well Owners?

If you own or operate any type of injection well, you are required to:

(1) Register and provide the requested inventory data to the State Department of Environmental Quality (DEQ). Registration forms are available from DEQ (see "Resources" below). DEQ is offering registration amnesty for private facilities until December 31, 1999, and for public jurisdictions / agencies until December 31, 2000. Following these deadlines, there may be processing fees and state enforcement for violations or failure to register.

(2) Meet a "non-endangerment" performance standard. In other words, fluids entering the injection well must meet State groundwater quality standards and drinking water standards at the point of injection or by the time the injected fluid reaches the water table.

(3) Submit a closure plan to DEQ then properly close banned wells or any injection well when you are through using it. A list of prohibited injection wells is provided to the left.

(4) Comply with other local, state and federal regulations (i.e., OAR 390-44 and 40 CFR, Part 144–147).

The registration information will be used to determine if the injection well qualifies as "rule authorized"and no separate permit is required. For an injection well to qualify as "rule authorized", facilities must be registered and meet DEQ siting requirements which include a determination that the well is constructed, operated, and maintained in a manner that does not endanger underground sources of drinking water.

If an owner or operator of a well cannot provide the required registration data or a well does not qualify as "rule authorized", then the owner may be required to: (1) close the injection well; (2) discharge to a local municipal storm water sewer (if available); or (3) apply for a DEQ Water Pollution Control Facilities (WPCF) permit. Municipalities and governmental agencies also have the option to negotiate an area-wide permit or a memorandum of agreement with DEQ.

Resources — Where Can I Get Help?

For local assistance, check your phone directory or billing information for your Sewer Utility, Water Utility, Public Works Department, County Development, or Planning Office. Your state and federal contacts are as follows:

Oregon Department of Environmental Quality (DEQ)	U.S. Environmental Protection Agency (EPA)
Toll free in Oregon at 1-800-452-4011 ✶ Sheree Stewart (503-229-5413) & Julie Harvey (503-229-5664), Oregon DEQ Drinking Water Protection Program; ✶ Barbara Priest, Oregon DEQ UIC Program Coordinator: (503) 229-5945. Internet Page: *http://waterquality.deq.state.or.us/wq/groundwa/uichome.htm* (DEQ UIC page) *http://watequality.deq.state.or.us/wq/* (drinking water protection and other water quality topics)	**1-800-424-4EPA.** Internet Page: *http://www.epa.gov/ogwdw/uic.html* (EPA Headquarters UIC Page) *http://epainotes1.rtpnc.epa.gov:7777/r10/water.nsf/webpage/Underground+Injection+Control+Program* (EPA Region 10 UIC page)

Accessibility Information

This publication is available in alternate format (e.g., large type, braille) by calling DEQ Public Affairs at (503) 229-5317 or toll free within Oregon at 1-800-452-4011. People with hearing impairments can call DEQ's TTY number at (503) 229-6993.